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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,499	03/09/2001	Kenichi Nishida	39303.20230.00	7445

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EXAMINER

WARREN, DAVID S

ART UNIT PAPER NUMBER

2837

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,499

Applicant(s)

NISHIDA ET AL.

Examiner

David S. Warren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 and 6-8 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 2 rejected under 35 U.S.C. 102(b) as being anticipated by Kumano et al. (5,796,023). The Kumano patent discloses the use of a plurality of pivotally mounted white and black keys (5W, 5B, respectively), a plurality of see-saw mass members (55, and Gw, Gb, figs. 21 and 23) with first and second arms (A, B, fig. 23), a resin portion of the mass member (col. 23, line 8), weight members in each arm (55b, 55d), i.e., element 55d, inherently has “weight.” The Kumano patent also shows that the weights are “set” (i.e., attached) to different keys wherein adjacent white and black keys have similar key-touch responses (col. 12, lines 36 – 38).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumano et al. (5,796,023) in view of Dodds et al. (4,273,017) or Lee (5,158,003). As discussed supra, Kumano discloses a keyboard for a musical instrument comprising

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weights in a see-saw mass member. Kumano does not teach the first arm “popping up to a level higher” than the key when the key is depressed. However, in Kumano’s figure 21, the *second* arm (especially element 63b) will contact element 65 in what appears to be a “higher level” than the depressed white key (when 5w makes contact with 15’). For clarity, the examiner notes that the applicant has defined the first arm as the arm that makes contact with the “follower.” Kumano also shows that the distance between weights (arms A and B inherently have weight) to be different and that the distance between the weight of the first arm to the pivot center (Q) is less than that for the second arm – see figure 23. Since the mass members of both the applicant and Kumano perform the same function, the examiner considers them to be equivalent in structure and function. However, since the applicant’s mass member lies above the key, the first arm will “pop up to a higher level” than the depressed key. As stated, Kumano does not show this feature (i.e., the higher first arm). Both Lee and Dodds show that when the instrument key is depressed, the first arm (i.e., the arm in contact with the follower – 27 in Lee, 30 in Dodds) “pops up to a higher level.” It would have been obvious to one of ordinary skill in the art to add the teachings of Lee (or Dodds) to those of Kumano. Dodds provides a motivation by showing that it is advantageous to mount both arms and keys on a “supporting base” (col. 2, first paragraph).

Regarding claim 4, as discussed *supra*, Kumano discloses a keyboard comprising a resin see-saw mass member with weighted arms. Kumano also discloses stoppers (64, 65), sensors (51, 52), and that the structures (i.e., sensors, stoppers, etc.) are identical for each key (see fig. 3). As defined by applicant, the follower (a means for

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receiving force from the key) is inherent – otherwise, the mass member of Kumano would not move when keys are depressed. Kumano does not disclose the use of “setting” weights in accordance with multiple octave sections of the keyboard. However, since the applicant does not define “set” – this can be broadly defined as “to put in a specified position.” Furthermore, official notice is taken that musical instrument keyboards almost always span multiple octaves. Therefore, it would have been obvious to one of ordinary skill in the art to “set” weights in the mass members throughout the range of the instrument. The motivation for this is that a keyboard musical instrument with only one octave would not allow the musician to play music in the popular or standard repertoire.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kumano ('023) in view of Monte et al. (5,003,859). As discussed supra, Kumano discloses the applicant's resin see-saw mass member having weights at either end. However, Kumano does not teach weights formed by a sheet member nor changing the weights by changing the thickness of the sheet member. Monte discloses the use of weights in a keyboard musical instrument wherein the weight can be adjusted by changing the thickness of the sheet material (see col. 10, lines 52 – 58). It would have been obvious to one of ordinary skill in the art to modify the teachings of Kumano to include adjusting the weight by modifying the sheet thickness. The motivation for making this combination is that the structural attributes (i.e., supporting) may be maintained while the weight is altered or adjusted.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter: Claims 3 and 6-8 are allowable over the prior art. Regarding claim 3, the prior art does not show the use of a weight with a hollow "volumetric capacity" to be set "so as to accomplish key scaling to key-touch response." Regarding claim 6, the prior art does not show the use of weights used in keyboard instrument, wherein the weights are made of laminations and covered in a resin. Regarding claims 7 and 8, the prior art does not show making keyboard weights and mass members by laminating sheets, half-punching the sheets to obtain a material with a projection on one side and a recess on the other, nor removing the weights from a cavity blade when a predetermined number of weight components are laminate one upon the other.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent to Kumano (5,574,241) discloses a resin pivoted and weighted see-saw mass member.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Warren whose telephone number is 703-308-5234. The examiner can normally be reached on M-F, 9 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on 703-308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-9529 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


dsw

April 4, 2003


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